

STATE OF SOUTH DAKOTA
 DEPARTMENT OF TRANSPORTATION
 PLANS FOR PROPOSED

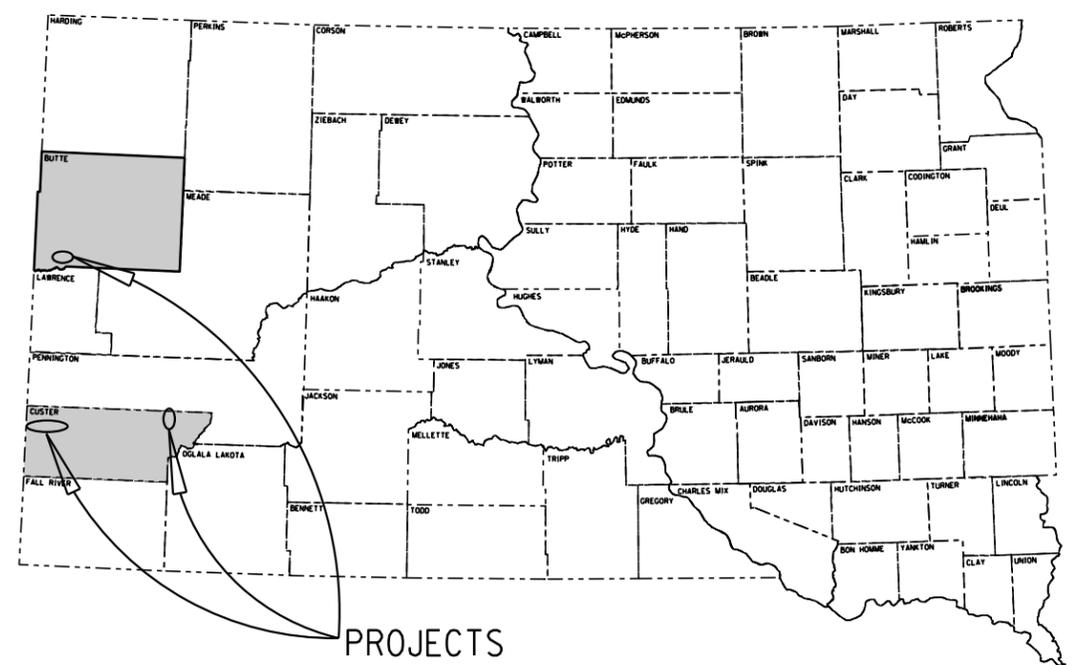
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0016(88)0, NH 0212(185)13 & NH 0079(76)58	1	17
Plotting Date: 02/17/2016			
Revise Date: - -			
Initials:			

Revised 2/12/2016 GDS

**PROJECT NO. NH 0016(88)0,
 NH 0212(185)13, & NH 0079(76)58
 US HIGHWAYS 16, & 212,
 & SD HIGHWAY 79
 CUSTER & BUTTE COUNTIES
 ASPHALT CONCRETE SHOULDER REPAIR
 PCN 05ML, 05MN, & 05MM**

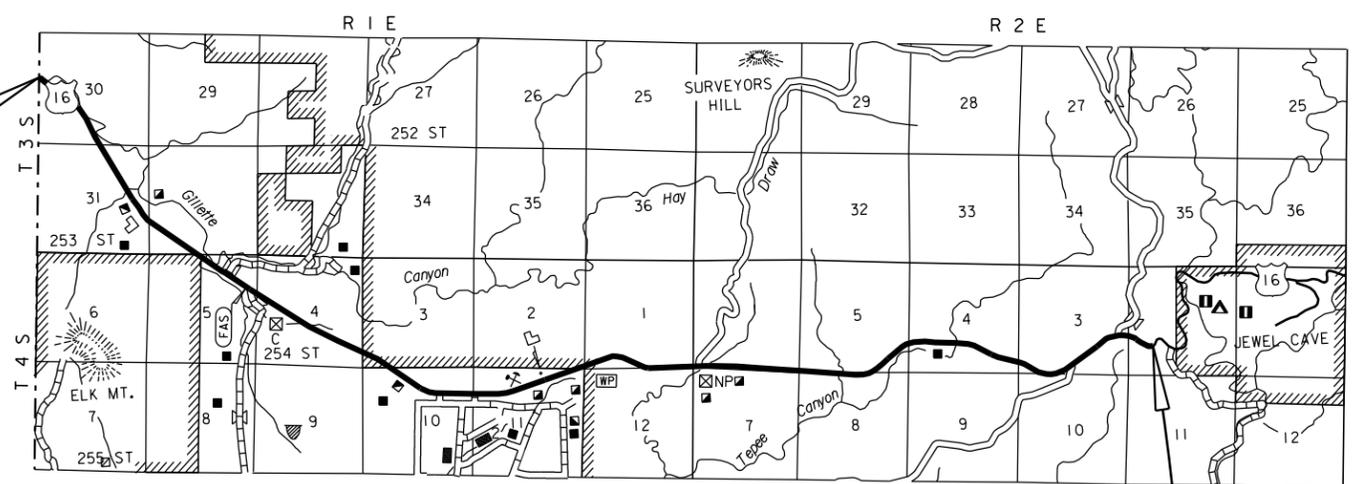
INDEX OF SHEETS

Sheet	1	Title and Index
Sheets	2- 9	Plan Estimate, Notes, and Tables
Sheets	10-12	Typical Sections
Sheets	13-17	Standard Plates

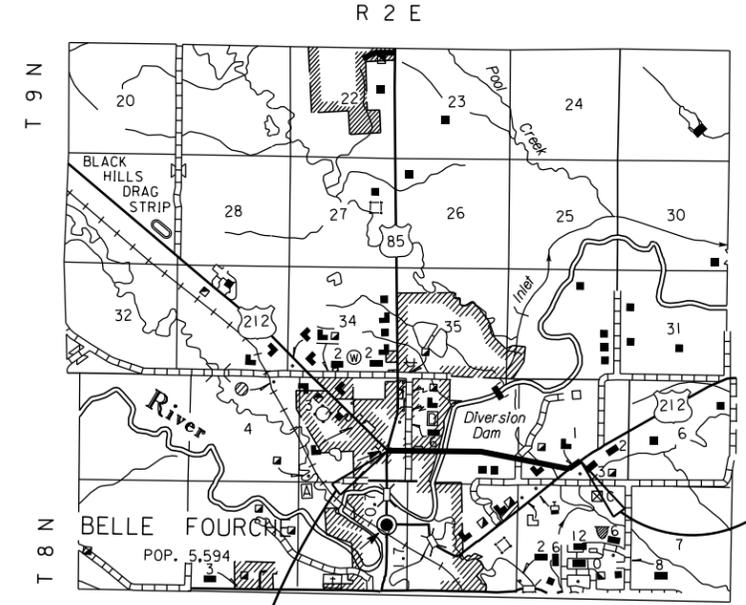


PROJECTS

BEGIN PROJECT
 NH 016(88)0
 MRM 0.00 +0.000

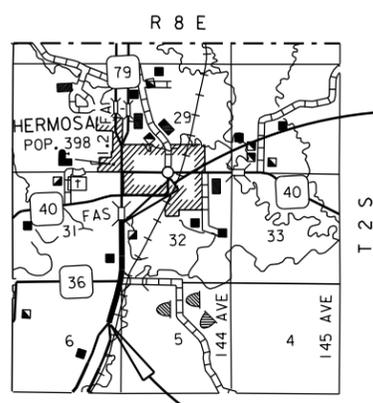


END PROJECT
 NH 016(88)0
 MRM 11.00 +0.117



END PROJECT
 NH 0212(185)13
 MRM 15.32 +0.100

BEGIN PROJECT
 NH 0212(185)13
 MRM 13.82 +0.047



END PROJECT
 NH 0079(76)58
 MRM 59.00 +0.740

BEGIN PROJECT
 NH 0079(76)58
 MRM 59.00 +0.298

DESIGN DESIGNATION PCN 05ML

ADT (2014)	1095
ADT (2034)	1330
DHV	260.7
D	53%
T DHV	4.4%
T ADT	9.7%
V	65 MPH

PCN 05ML

Gross Length	58697.76 Feet	11.117 Miles
Length of Exceptions	0.00 Feet	0.000 Miles
Net Length	58697.76 Feet	11.117 Miles

DESIGN DESIGNATION PCN 05MM

ADT (2014)	4995
ADT (2034)	6069
DHV	752.5
D	50%
T DHV	6.9%
T ADT	15.1%
V	65 MPH

PCN 05MM

Gross Length	1108.80 Feet	0.210 Miles
Length of Exceptions	0.00 Feet	0.000 Miles
Net Length	1108.80 Feet	0.210 Miles

DESIGN DESIGNATION PCN 05MN

ADT (2014)	2033
ADT (2034)	2290
DHV	352.6
D	51%
T DHV	6.6%
T ADT	14.6%
V	65 MPH

PCN 05MN

Gross Length	8448.00 Feet	1.600 Miles
Length of Exceptions	0.00 Feet	0.000 Miles
Net Length	8448.00 Feet	1.600 Miles

ESTIMATE OF QUANTITIES

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0016(88)0, NH 0212(185)13, & NH 0079(76)58		
Revised 2/17/2016 GDS		2	17

PCN 05ML - US Highway 16

Alternate A

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
320E0004	PG 58-28 Asphalt Binder	586.9	Ton
320E1070	Class HR Asphalt Concrete	14,648.4	Ton

Alternate B

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
320E0004	PG 58-28 Asphalt Binder	543.5	Ton
320E1070	Class HR Asphalt Concrete	15,039.9	Ton

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E3320	Checker	Lump Sum	LS
120E0010	Unclassified Excavation	2,687	CuYd
120E0100	Unclassified Excavation, Digouts	277	CuYd
120E6200	Water for Granular Material	128.5	MGal
210E2000	Shoulder Shaping	22.200	Mile
250E0010	Incidental Work	Lump Sum	LS
260E1010	Base Course	554.3	Ton
320E3000	Compaction Sample	3	Each
320E5010	Saw and Seal Shoulder Joint	117,047	Ft
330E0010	MC-70 Asphalt for Prime	138.0	Ton
330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	26.1	Ton
332E0010	Cold Milling Asphalt Concrete	91,878	SqYd
600E0200	Type II Field Laboratory	1	Each
634E0010	Flagging	500.0	Hour
634E0020	Pilot Car	100.0	Hour
634E0110	Traffic Control Signs	208	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS

PCN 05MM - US Highway 79

Alternate A

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
320E0004	PG 58-28 Asphalt Binder	17.1	Ton
320E1070	Class HR Asphalt Concrete	426.1	Ton

Alternate B

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
320E0004	PG 58-28 Asphalt Binder	15.8	Ton
320E1070	Class HR Asphalt Concrete	437.9	Ton

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E3320	Checker	Lump Sum	LS
120E0100	Unclassified Excavation, Digouts	8	CuYd
120E6200	Water for Granular Material	3.6	MGal
210E2000	Shoulder Shaping	0.600	Mile
250E0010	Incidental Work	Lump Sum	LS
260E1010	Base Course	15.6	Ton
320E3000	Compaction Sample	3	Each
320E5010	Saw and Seal Shoulder Joint	3,284	Ft
330E0010	MC-70 Asphalt for Prime	4.0	Ton
330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	0.6	Ton
332E0010	Cold Milling Asphalt Concrete	2,919	SqYd
600E0200	Type II Field Laboratory	1	Each
634E0010	Flagging	300.0	Hour
634E0110	Traffic Control Signs	297	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Board	1	Each

PCN 05MN - US Highway 212

Alternate A

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
320E0004	PG 58-28 Asphalt Binder	82.0	Ton
320E1070	Class HR Asphalt Concrete	2,047.6	Ton

Alternate B

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
320E0004	PG 58-28 Asphalt Binder	76.0	Ton
320E1070	Class HR Asphalt Concrete	2,102.2	Ton

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E3320	Checker	Lump Sum	LS
120E0010	Unclassified Excavation	368	CuYd
120E0100	Unclassified Excavation, Digouts	38	CuYd
120E6200	Water for Granular Material	17.6	MGal
210E2000	Shoulder Shaping	3.000	Mile
250E0010	Incidental Work	Lump Sum	LS
260E1010	Base Course	76.0	Ton
260E6000	Granular Material, Furnish	1,609.2	Ton
270E0200	Blend, Haul, and Stockpile Granular Material	3,218.4	Ton
320E3000	Compaction Sample	3	Each
320E5010	Saw and Seal Shoulder Joint	16,041	Ft
330E0010	MC-70 Asphalt for Prime	19.2	Ton
330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	3.6	Ton
332E0010	Cold Milling Asphalt Concrete	12,833	SqYd
600E0200	Type II Field Laboratory	1	Each
634E0010	Flagging	300.0	Hour
634E0020	Pilot Car	150.0	Hour
634E0110	Traffic Control Signs	208	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
900E0010	Refurbish Single Mailbox	1	Each

* - Denotes Non-Participating

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
SOUTH DAKOTA	NH 0016(88)0, NH 0212(185)13, & NH 0079(76)58	3	17

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2015 Edition and Required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal

ENVIRONMENTAL COMMITMENTS

An Environmental Commitment is a measure that SDDOT commits to implement in order to avoid, minimize, and/or mitigate a real or potential environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency mentioned below with permitting authority can influence a project if perceived environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor's primary contact regarding matters associated with these commitments will be the Project Engineer. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office. The environmental commitments associated with this project are as follows:

COMMITMENT B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES

COMMITMENT B2: WHOOPING CRANE

The Whooping Crane is a spring and fall migratory bird in South Dakota that is about 5 feet tall and typically stops on wetlands, rivers, and agricultural lands along their migration route. An adult Whooping Crane is white with a red crown and a long, dark, pointed bill. Immature Whooping Cranes are cinnamon brown. While in flight, their long necks are kept straight and their long dark legs trail behind. Adult Whooping Cranes' black wing tips are visible during flight.

Action Taken/Required:

Harassment or other measures to cause the Whooping Crane to leave the site is a violation of the Endangered Species Act. If a Whooping Crane is sighted roosting in the vicinity of the project, borrow pit, or staging site associated with the project, cease construction activities in the affected area until the Whooping Crane departs and contact the Project Engineer. The Project Engineer will contact the Environmental Office so that the sighting can be reported to USFWS.

COMMITMENT B4: BALD EAGLE

Bald eagles are known to occur in this area.

Action Taken/Required:

If a nest is observed within one mile of the project site, notify the Project Engineer immediately so that he/she can consult with the Environmental Office for an appropriate course of action.

COMMITMENT C: WATER SOURCE

The Contractor shall not withdraw water with equipment previously used outside the State of South Dakota without prior approval from the SDDOT Environmental Office. Thoroughly wash all construction equipment before entering South Dakota to reduce the risk of invasive species introduction into the project vicinity.

Action Taken/Required:

The Contractor shall obtain the necessary permits from the regulatory agencies such as the Department of Environment and Natural Resources (DENR) and the United States Army Corps of Engineers (COE) prior to executing water extraction activities.

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

Action Taken/Required:

At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.

COMMITMENT H: WASTE DISPOSAL SITE

The Contractor shall furnish a site(s) for the disposal of construction and/or demolition debris generated by this project.

Action Taken/Required:

Construction and/or demolition debris may not be disposed of within the State ROW. The waste disposal site(s) shall be managed and reclaimed in accordance with the following from the General Permit for Highway, Road, and Railway Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Environment and Natural Resources.

The waste disposal site(s) shall not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Project Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements shall apply:

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials shall be buried in a trench completely separate from wood debris. The final cover over the construction and/or demolition debris shall consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the State ROW shall be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor shall control the access to waste disposal sites not within the State ROW through the use of fences, gates, and placement of a sign or signs at the entrance to the site stating "No Dumping Allowed".

2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period of time not to exceed the duration of the project. Prior to project completion, the waste shall be removed from view of the ROW or buried and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10.06.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

All costs associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates, and signs), and reclamation of the waste disposal site(s) shall be incidental to the various contract items.

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
SOUTH DAKOTA	NH 0016(88)0, NH 0212(185)13, & NH 0079(76)58	4	17

COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historical Preservation Office (SHPO or THPO) for all work included within the project limits and all designated option borrow sites provided within the plans.

Action Taken/Required:

All earth disturbing activities not designated within the plans require review of cultural resources impacts. This work includes, but is not limited to: staging areas, borrow sites, waste disposal sites, and all material processing sites.

The Contractor shall arrange and pay for a cultural resource survey and/or records search. The Contractor has the option to contact the state Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources survey. A record search might be sufficient for review; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor shall provide ARC with the following: a topographical map or aerial view on which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that artifacts have not been found on the site.

The Contractor shall submit the records search or cultural resources survey report and if the location of the site is within the current geographical or historic boundaries of any South Dakota reservation to SDDOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3180). SDDOT will submit the information to the appropriate SHPO/THPO. Allow **30 Days** from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

If evidence for cultural resources is uncovered during project construction activities, then such activities shall cease and the Project Engineer shall be immediately notified. The Project Engineer will contact the SDDOT Environmental Engineer in order to determine an appropriate course of action.

SHPO/THPO review does not relieve the Contractor of the responsibility for obtaining any additional permits and clearances for staging areas, borrow sites, waste disposal sites, or material processing sites that affect wetlands, threatened and endangered species, or waterways. The Contractor shall provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

COMMITMENT R: FIRE PREVENTION IN THE BLACK HILLS AREA

This project is located within the confines of the Black Hills Forest Fire Protection Boundary.

Action Taken/Required:

The Contractor shall adhere to the "Special Provision for Fire Plan".

UTILITIES

The Contractor shall be responsible for locating and protecting any utility that would conflict with any work. Utilities are not planned to be affected on this project. If utilities are identified near the improvement area through the SD One Call Process as required by South Dakota Codified Law 49-7A and Administrative Rule Article 20:25, the contractor shall contact the project engineer to determine modifications that will be necessary to avoid utility impacts.

Any damage done to a utility will be the Contractor's responsibility to repair.

Utilities within the limits of the proposed construction shall be adjusted by the owner unless otherwise indicated in these plans.

SURFACING THICKNESS DIMENSIONS

Plans tonnage shall be applied even though the thickness may vary from that shown in the plans. At those locations where material must be placed to achieve a required elevation, plans tonnage may be varied to achieve the required elevation.

INTERSECTING ROADS AND ENTRANCES

Intersecting roads and entrances shall be satisfactorily cleared of vegetation, shaped, milled and compacted prior to placement of mainline surfacing. This work shall be considered incidental to the various bid items on the project.

EXCAVATION OF UNSTABLE MATERIAL

Included in the Estimate of Quantities is a combined rate for both shoulders of 25 cubic yards of Unclassified Excavation, Digouts per mile for necessary removal of unstable material.

Included in the Estimate of Quantities is a combined rate for both shoulders of 50 tons per mile of Base Course for backfilling the digouts.

SIGNS AND DELINEATION

The Contractor will be required to remove and reinstall delineator posts, signs, etc., as necessary for construction of this project. Reinstallation shall be as directed by the Engineer. Cost of performing this work shall be incidental to the contract lump sum price for Incidental Work. Any delineators, signs, etc. damaged and/or lost through removal and/or storage shall be replaced by the Contractor at no cost to the State.

INCIDENTAL WORK

Included in this item are the following:

1. Removal and resetting of delineator posts, bases, signs etc. as needed during construction of the project.

TYPE II FIELD LABORATORY

The lab shall be equipped with an internet connection such as DSL, cable modem, or other approved service. The internet connection shall be provided with a multi-port wireless router. The internet connection shall be a minimum speed of 512 Kb unless limited by job location and approved by the DOT. Prior to installing the wireless router the Contractor shall submit the wireless router's technical data to the Area Office to check for compatibility with the state's computer equipment. The internet connection is intended for state personnel usage only. The Contractor's personnel are prohibited from using the internet connection unless pre-approved by the Project Engineer.

The Contractor shall submit a copy of each monthly bill for calls charged to this phone at the end of each month. The Project Engineer will then audit the bills to ensure all calls are legitimate and then initiate a Construction Change Order (CCO) to reimburse the Contractor for the actual phone calls made, including local and long distance calls. Reimbursement will not be made for fees associated with the purchase, installation, disconnection, monthly line charges, and incidentals involved in the installation, maintenance, and disconnection of the phone (including attachments). These items shall be incidental to the contract unit price per each for Type II Field Laboratory.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0016(88)0, NH 0212(185)13, & NH 0079(76)58	5	17
Revised 2/17/2016 GDS			

COLD MILLING ASPHALT CONCRETE

The work consists of cold milling the existing asphalt concrete surface course.

The Los Angeles Abrasion Loss value on the aggregate used for the in place asphalt concrete could not be determined.

Prior to allowing traffic on the milled surface, the surface shall be thoroughly broomed free of remaining loose material.

The work shall be performed only during daylight hours.

Granular material shall be bladed up against the PCCP to eliminate the 3" drop off prior to asphalt for prime operations.

05ML - US Highway 16

Cold milling asphalt is estimated to produce 16109.5 tons of RAP. An estimated 4648.2 tons of RAP will be used on this project in the Class HR Asphalt Concrete mixture. An additional 124.7 tons of RAP from this project shall be used for PCN 05MM - US Highway 79.

Excess Millings shall become the property of the Contractor.

05MM - US Highway 79

The millings required for the RAP on this project shall be sourced from PCN 05ML – US Highway 16. All costs associated with loading, transporting and stockpiling the millings from the Highway 16 project for use on this project shall be incidental to the contract unit price per ton for Class HR Asphalt Concrete

Cold milling asphalt is estimated to produce 457.3 tons of millings.

Excess Millings shall become the property of the Contractor.

05MN - US Highway 212

Cold milling asphalt is estimated to produce 2207.7 tons of RAP. An estimated 598.5 tons of RAP will be used on this project in the Class HR Asphalt Concrete mixture.

Excess Millings shall be Blended with Granular Material, Furnish and hauled to the Belle Fourche DOT yard as directed by the Engineer.

The physical address of the Belle Fourche yard is:

SDDOT Belle Fourche Area Office
10921 West Hwy 34
Belle Fourche, SD 57717

The Contractor is responsible to assure enough RAP is available for the Class HR Asphalt Concrete. The remainder of the salvaged asphalt concrete material shall be stockpiled or disposed of as directed by the Engineer.

GRANULAR MATERIAL, FURNISH

Granular Material shall be furnished by the Contractor for use in blending with the salvaged asphalt mix material from this project.

The Granular Material shall be Base Course meeting the requirements of Section 882.

BLEND, HAUL & STOCKPILE GRANULAR MATERIAL

05MN - US Highway 212

An Estimated 1609.2 tons (for informational purposes only) of RAP material shall be blended with 1609.2 tons of Granular Material, Furnish and hauled and stockpiled at the Belle Fourche DOT facility yard as directed by the Engineer.

The Contractor shall use a portable platform scale, stationary commercial scale, stationary commercial plant, portable plant scale, or a belt scale to control the blending and weighing of the salvage material with Contractor furnished granular material.

The RAP shall be crushed to meet the requirements of Section 884.2C.1 prior to blending into the stockpile.

RAP shall be blended with Granular Material, Furnished at a rate of 50% RAP material and 50% Granular Material, Furnished to obtain stockpile material. The use of a pugmill to blend the materials will be accepted.

Screening or scalping of the RAP stockpile(s) will not be allowed.

Calibrated conveyor(s) shall be used to provide a uniform blending of the materials. Material shall be blended prior to incorporation into the pile.

No further testing of the blended material will be required.

All costs for crushing the salvaged asphalt mix material, hauling, stockpiling, and blending asphalt mix material and Granular Material, Furnish shall be incidental to the contract unit price per ton for Blend, Haul & Stockpile Granular Material.

CLASS HR ASPHALT CONCRETE

Virgin mineral aggregate for Class HR Asphalt Concrete Alternate A shall conform to the requirements for Class E, Type 1.

Virgin mineral aggregate for Class HR Asphalt Concrete Alternate B shall consist of a minimum of 80 percent crushed limestone ledgerock and shall conform to the requirements for Class E, Type 1.

The RAP shall be crushed so the particle size in the cold feed will meet the requirements specified in Section 884.2 C.1.

Screening or scalping of the RAP stockpile(s) will not be allowed.

05ML - US Highway 16

An estimated 4648.2 tons of RAP is needed for the Class HR mixture.

05MM - US Highway 79

An estimated 124.7 tons of RAP is needed for the Class HR mixture.

05MN - US Highway 212

An estimated 598.5 tons of RAP is needed for the Class HR mixture.

The Class HR Asphalt Concrete shall include 30 percent RAP in the mixture.

SHOULDER SHAPING

Shoulder Shaping shall be performed on US16, SD79, & US212 as shown in the typical sections.

Prior to placing the asphalt concrete overlay, the upper portion of shoulders shall be scarified, reworked and shaped as detailed on the typical sections.

Compaction of the reworked shoulders shall be according to Section 260.3D of the Specifications.

Water for Granular Material, for shaping and compaction, shall be applied at a rate of 5.8 M gallons per mile per shoulder.

After completion of the shoulder shaping the shoulders shall be primed as provided in the Rates of Materials.

Provide for shoulder shaping on US16, SD79, & US212 as shown in the typical sections. Shoulder shaping shall be accomplished prior to Asphalt Concrete Surfacing. After completion of the shoulder shaping the shoulders shall be primed as provided in the Rates of Materials.

CHECKING SPREAD RATES

The Contractor shall be responsible for checking the Asphalt Concrete Surfacing and Base Course spread rates and take the weigh delivery tickets as the surfacing material arrives on the project and is placed onto the roadway.

The Contractor shall compute the required spread rates for each typical surfacing section and create a spread chart prior to the start of material delivery and placement. The Engineer will review and check the Contractor's calculations and spread charts.

The station to station spread shall be written on each ticket as the surfacing material is delivered to the roadway.

At the end of each day's shift, the Contractor shall verify the following:

- All tickets are present and accounted for,
- The quantity summary for each item is calculated,
- The amount of material wasted if any,
- Each day's ticket summary is marked with the corresponding 'computed by',
- The ticket summary is initialed and certified that the delivered and placed quantity is correct.

All daily tickets and the summary by item shall be given to the Engineer no later than the following morning.

If the checker is not properly and accurately performing the required duties, the Contractor shall correct the problem or replace the checker with an individual capable of performing the duties to the satisfaction of the Engineer. Failure to do so will result in suspension of the work.

The Department will perform depth checks. The Contractor shall be responsible for placement of material to the correct depth unless otherwise directed by the Engineer. If the placed material is not within a tolerance of $\pm 1/4$ " of the plan shown depth, the Contractor shall correct the problem at no additional cost to the Department. Excess material above the tolerance will not be paid for. Achieving the correct depth may require picking up and moving material or other action as required by the Engineer.

All costs for providing the Contractor furnished checker and performing all related duties shall be incidental to the contract lump sum price for the Checker. No allowances will be made to the contract lump sum price for Checker due to authorized quantity variations unless the quantities for the material being checked vary above or below the estimated quantities by more than 25%. Payment for the Checker shall then be increased or decreased by the same proportion as the placed material quantity bears to the estimated material quantity.

RATES OF MATERIALS, SURFACING

**PCN 05ML
US Highway 16
MRM 0.00 to MRM 11.117**

Class HR Concrete - 3" Lift
(6' Shoulder - One Shoulder Only)

All quantities per mile

	Alt A	Alt B
Crushed Aggregate	= 453.0 Ton	467.0 Ton
RAP	= 194.0 Ton	200.0 Ton
PG 58-28 Asphalt Binder	= 27.0 Ton	25.0 Ton
TOTAL MIX	= 674.0 Ton	692.0 Ton

The exact proportions of these materials will be determined on construction

MC-70 asphalt for Prime at the rate of 6.3 tons
applied 9 feet wide (Rate = 0.30 gallons per square yard)

Emulsified Asphalt for Flush Seal SS-1h or CSS-1h at the rate
of 1.2 ton applied 8 feet wide (Rate = 0.05 gallons per square yard)

**PCN 05ML
US Highway 16
MRM 0.00 to MRM 11.117**

Class HR Concrete - 3" Lift
(4' Shoulder - One Shoulder Only)

All quantities per mile

	Alt A	Alt B
Crushed Aggregate	= 321.8 Ton	331.8 Ton
RAP	= 137.8 Ton	142.1 Ton
PG 58-28 Asphalt Binder	= 19.2 Ton	17.8 Ton
TOTAL MIX	= 478.8 Ton	491.7 Ton

The exact proportions of these materials will be determined on construction

MC-70 asphalt for Prime at the rate of 5.2 tons
applied 7 feet wide (Rate = 0.30 gallons per square yard)

Emulsified Asphalt for Flush Seal SS-1h or CSS-1h at the rate
of 0.8 ton applied 6 feet wide (Rate = 0.05 gallons per square yard)

RATES OF MATERIALS, SURFACING (CONTINUED)

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0016(88)0, NH 0212(185)13, & NH 0079(76)58	7	17
Revised 2/17/2016 GDS			

PCN 05MM

US Highway 79

Northbound Shoulder
MRM 59.318 to MRM 59.740
Southbound Shoulder
MRM 59.298 to MRM 59.498

All quantities per station

Class HR Concrete - 3" Lift
(One Shoulder Only)

	Alt A	Alt B
Crushed Aggregate	= 8.70 Ton	8.98 Ton
RAP	= 3.73 Ton	3.85 Ton
PG 58-28 Asphalt Binder	= 0.52 Ton	0.48 Ton
TOTAL MIX	= 12.95 Ton	13.31 Ton

The exact proportions of these materials will be determined on construction

MC-70 asphalt for Prime at the rate of 0.12 tons
applied 9 feet wide (Rate = 0.30 gallons per square yard)

Emulsified Asphalt for Flush Seal SS-1h or CSS-1h at the rate
of 0.02 tons applied 8 feet wide (Rate = 0.05 gallons per square yard)

PCN 05MN

US Highway 212

MRM 13.82 to MRM 15.42

All quantities per mile

The exact proportions of these materials will be determined on construction

Class HR Concrete - 3" Lift
(One Shoulder Only)

	Alt A	Alt B
Crushed Aggregate	= 453.0 Ton	467.0 Ton
RAP	= 194.0 Ton	200.0 Ton
PG 58-28 Asphalt Binder	= 27.0 Ton	25.0 Ton
TOTAL MIX	= 674.0 Ton	692.0 Ton

MC-70 asphalt for Prime at the rate of 6.3 tons
applied 9 feet wide (Rate = 0.30 gallons per square yard)

Emulsified Asphalt for Flush Seal SS-1h or CSS-1h at the rate
of 1.2 tons applied 8 feet wide (Rate = 0.05 gallons per square yard)

Table of Material Quantities

Route	L/R	MRM to MRM	Length (Miles)	Cold Milling Asphalt Concrete (SqYd)	Unclassified Excavation (CuYd)	Unclassified Excavation Digouts (CuYd)	Base Course (Ton)	Shoulder Shaping (Mile)	Water for Granular Material (Mgal)	Alt A		Alt B		MC-70 Asphalt for Prime (Ton)	SS-1h or CSS-1h Asphalt for Flush Seal (Ton)	Saw and Seal Shoulder Joint (Ft)	Granular Material, Furnish (Ton)	Blend Haul and Stockpile Granular Material (Ton)
										Class HR Asphalt Concrete (Ton)	PG 58-28 Asphalt Binder (Ton)	Class HR Asphalt Concrete (Ton)	PG 58-28 Asphalt Binder (Ton)					
PCN 05ML - US Highway 16																		
16	L	0.000 11.117	11.084	46818.8	1343.7	138.6	277.1	11.1	64.3	7470.6	299.3	7670.1	277.1	69.8	13.3	58523.5		
16	R	0.000 0.900	0.900	3801.6	109.1	11.3	22.5	0.9	5.2	606.6	24.3	622.8	22.5	5.7	1.1	4752.0		
		0.900 1.400	0.500	1525.3	60.6	6.3	12.5	0.5	2.9	239.4	9.6	245.9	8.9	2.6	0.4	2640.0		
		1.400 4.730	3.330	14065.9	403.7	41.6	83.3	3.3	19.3	2244.4	89.9	2304.4	83.3	21.0	4.0	17582.4		
		4.730 5.330	0.500	1525.3	60.6	6.3	12.5	0.5	2.9	239.4	9.6	245.9	8.9	2.6	0.4	2640.0		
		5.330 10.300	4.970	20993.3	602.5	62.1	124.3	5.0	28.8	3349.8	134.2	3439.2	124.3	31.3	6.0	26241.6		
		10.300 10.800	0.500	1525.3	60.6	6.3	12.5	0.5	2.9	239.4	9.6	245.9	8.9	2.6	0.4	2640.0		
		10.800 11.117	0.384	1622.0	46.6	4.8	9.6	0.4	2.2	258.8	10.4	265.7	9.6	2.4	0.5	2027.5		
Total				91877.5	2687.4	277.3	554.3	22.2	128.5	14648.4	586.9	15039.9	543.5	138.0	26.1	117047.0		
PCN 05MM - US Highway 79																		
79	L	59.298 59.498	0.200	938.7		2.5	5.0	0.2	1.2	137.3	5.5	141.1	5.1	1.3	0.2	1056.0		
79	R	59.318 59.740	0.422	1980.6		5.3	10.6	0.4	2.4	288.8	11.6	296.8	10.7	2.7	0.4	2228.2		
Total				2919.3		7.8	15.6	0.6	3.6	426.1	17.1	437.9	15.8	4.0	0.6	3284.2		
PCN 05MN - US Highway 212																		
212	L	13.820 15.420	1.519	6416.3	184.2	19.0	38.0	1.5	8.8	1023.8	41.0	1051.1	38.0	9.6	1.8	8020.3	804.6	1609.2
212	R	13.820 15.420	1.519	6416.3	184.2	19.0	38.0	1.5	8.8	1023.8	41.0	1051.1	38.0	9.6	1.8	8020.3	804.6	1609.2
Total				12832.6	368.4	38.0	76.0	3.0	17.6	2047.6	82.0	2102.2	76.0	19.2	3.6	16040.6	1609.2	3218.4

TRAFFIC CONTROL – GENERAL NOTES

1. Requests to deviate from the sequence of operations shall be submitted in writing to the Engineer for review. Approval of an alternate sequence of operations will only be allowed when the proposed changes meet with the Department's intent for traffic control and sequencing of the work. An alternate sequence shall be submitted for review a minimum of one week prior to potential implementation.
2. Unless otherwise stated in these plans, no work will be allowed during hours of darkness.
3. Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage of the vegetation, surfacing, embankment, delineators, and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the State, and to the satisfaction of the Engineer.
4. Existing guide, route, informational logo, regulatory, warning signs and delineation shall be temporarily reset and maintained during construction as directed by the Engineer. Removing, relocating, salvaging and resetting of the above items shall be the responsibility of the Contractor.
5. Non-applicable traffic control devices shall be completely covered or removed during periods of inactivity. Periods of inactivity shall be defined as no work taking place for a period of more than 48 hours.
6. Construction signing mounted on portable supports shall not be used for a duration of more than 3 days, unless approved by the Engineer. Construction signing that remains in the same location for more than 3 days shall be mounted on fixed location, ground mounted, breakaway supports.
7. Any delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.
8. All materials and equipment shall be stored a minimum distance of 30' from the traveled way during nonworking hours.
9. The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.
10. All haul trucks shall be equipped with a second flashing amber light that is visible from the backside of the haul truck. The costs for the flashing amber lights shall be incidental to the various related contract bid items.
11. All construction operations shall be conducted in the general direction of traffic movement.
12. If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD – whichever is more stringent shall be used, as determined by the Engineer.

13. Temporary Flexible Vertical Markers (Tabs) shall be used for lane closure tapers or lane shift tapers and shall be installed at 5' spacing. Tabs used for tapers and shifts will not be measured for payment. All costs associated to furnish, install, maintain (including replacement as required by the Engineer at no added cost to the Department), and remove all markers will be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

14. At no time shall a shoulder dropoff greater than 3" be left overnight during asphalt prime operations.

15. W8-17 and W8-17P signs shall be placed at two mile intervals on all three projects.

INVENTORY OF TRAFFIC CONTROL DEVICES

PCN 05ML - US Highway 16

SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-17	SHOULDER DROP-OFF (symbol)	2	48" x 48"	16	32
W8-17P	SHOULDER DROP-OFF (plaque)	2	24" x 18"	3	6
W20-1	ROAD WORK AHEAD	2	48" x 48"	16	32
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16	32
W20-7	FLAGGER (symbol)	2	48" x 48"	16	32
W21-2	FRESH OIL	2	48" x 48"	16	32
W21-5	SHOULDER WORK	2	48" x 48"	16	32
G20-2	END ROAD WORK	2	36" x 18"	5	10
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					208

PCN 05MM - US Highway 79

SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W4-2	LEFT or RIGHT LANE ENDS (symbol)	1	48" x 48"	16	16
W8-17	SHOULDER DROP-OFF (symbol)	5	48" x 48"	16	80
W8-17P	SHOULDER DROP-OFF (plaque)	5	30" x 24"	5	25
W20-1	ROAD WORK AHEAD	2	48" x 48"	16	32
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16	32
W20-7	FLAGGER (symbol)	2	48" x 48"	16	32
W21-2	FRESH OIL	2	48" x 48"	16	32
W21-5	SHOULDER WORK	2	48" x 48"	16	32
G20-2	END ROAD WORK	2	48" x 24"	8	16
EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT					297

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0016(88)0, NH 0212(185)13, & NH 0079(76)58	9	17
Revised 2/16/2016 GDS			

PCN 05MN - US Highway 212

SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-17	SHOULDER DROP-OFF (symbol)	2	48" x 48"	16	32
W8-17P	SHOULDER DROP-OFF (plaque)	2	24" x 18"	3	6
W20-1	ROAD WORK AHEAD	2	48" x 48"	16	32
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16	32
W20-7	FLAGGER (symbol)	2	48" x 48"	16	32
W21-2	FRESH OIL	2	48" x 48"	16	32
W21-5	SHOULDER WORK	2	48" x 48"	16	32
G20-2	END ROAD WORK	2	36" x 18"	5	10
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					208

REFLECTORIZED SHEETING REQUIREMENTS FOR TEMPORARY TRAFFIC CONTROL DEVICES

Delete the first paragraph of Section 984.1 and replace with the following:

Temporary traffic control devices, including signs, drums, cones, tubular markers, barricades, vertical panels, and direction indicator barricades shall be reflectorized with sheeting applied to a satisfactory backing. Flat surfaced temporary traffic control devices including, but not limited to; signs, barricades, vertical panels, and direction indicator barricades shall be reflectorized with super/very high intensity reflectorized sheeting meeting the standards of Type XI as defined by AASHTO M 268 (ASTM D4956). Round surfaced temporary traffic control devices including, but not limited to; drums, cones, and tubular markers shall be reflectorized with high intensity reflectorized sheeting meeting the standards of Type IV as defined by AASHTO M 268 (ASTM D4956). All orange colored material shall be fluorescent.

MAILBOXES

The Contractor shall reset the existing mailboxes on new posts with the necessary support hardware for single or double mailbox assemblies. The local Postmaster will determine the recommended mounting height of the mailboxes throughout the project. The Contractor shall coordinate with the Engineer on the proper postal representative to contact.

If large mailboxes are located at double mailbox installations, a single post may need to be used for the large mailbox.

All costs for removing existing mailboxes, providing temporary mailboxes, and resetting mailboxes with new posts and necessary support hardware shall be incidental to the contract unit price per each for Refurbish Single Mailbox or Refurbish Double Mailbox.

Route	MRM	L/R	Refurbish Single Mailbox (Each)
212	14.642	L	1
Total			1

TYPICAL SECTION

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0016(88)0, NH 0212(185)13 & NH 0079(76)58	10	17

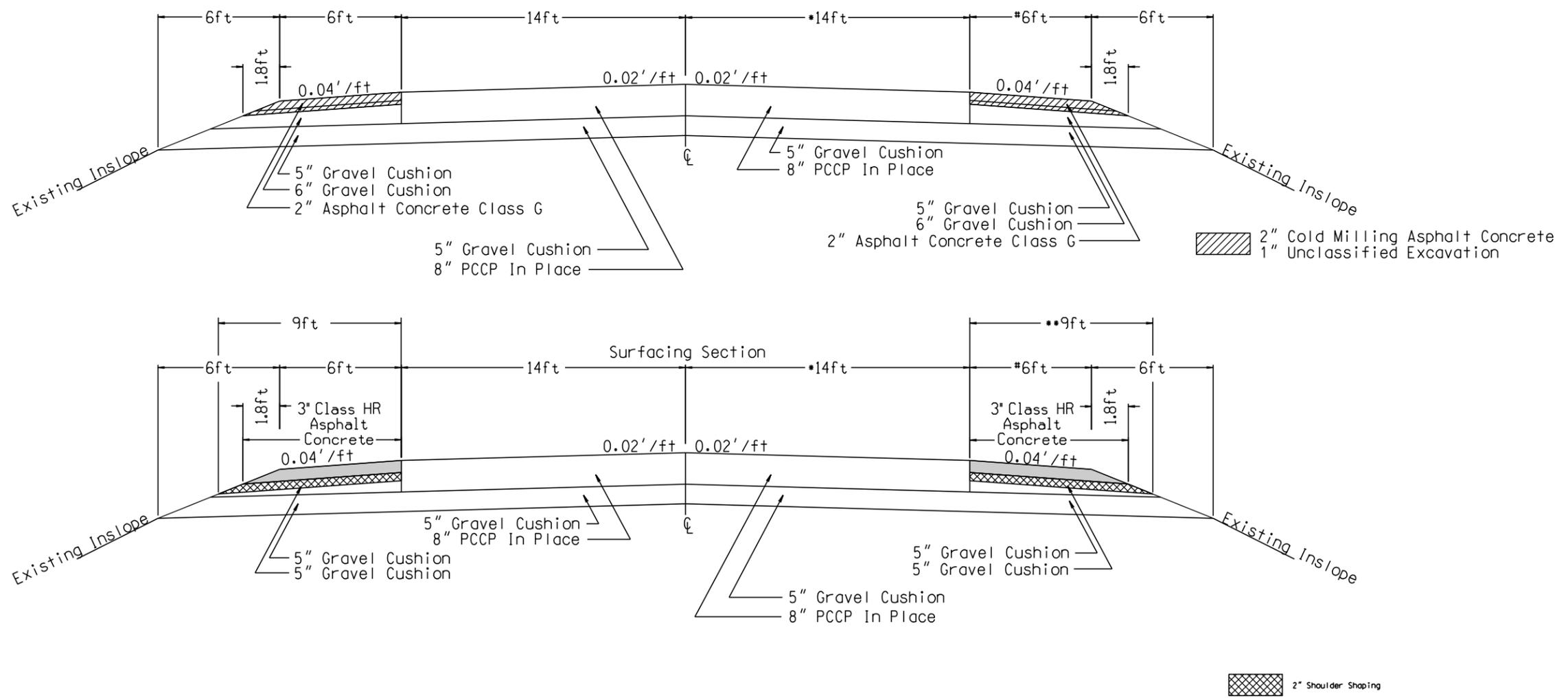
Plotting Date: 02/01/2016

* 22ft wide
MRM 0.90 - MRM 1.40
MRM 4.73 - MRM 5.33
MRM 10.30 - MRM 10.80

** 7ft wide
MRM 0.90 - MRM 1.40
MRM 4.73 - MRM 5.33
MRM 10.30 - MRM 10.80

4ft wide
MRM 0.90 - MRM 1.40
MRM 4.73 - MRM 5.33
MRM 10.30 - MRM 10.80

US Highway 16
MRM 0.00+0.000 to MRM 11.00+0.117
In Place, Cold Milling and Excavation Section



PLOT SCALE - 1+6.1875

PLOTTED FROM - TRRC12508

PLOT NAME - 2

FILE - ... \PRJ\CUSTOM\05ML\02\ML TYP.DGN

TYPICAL SECTION

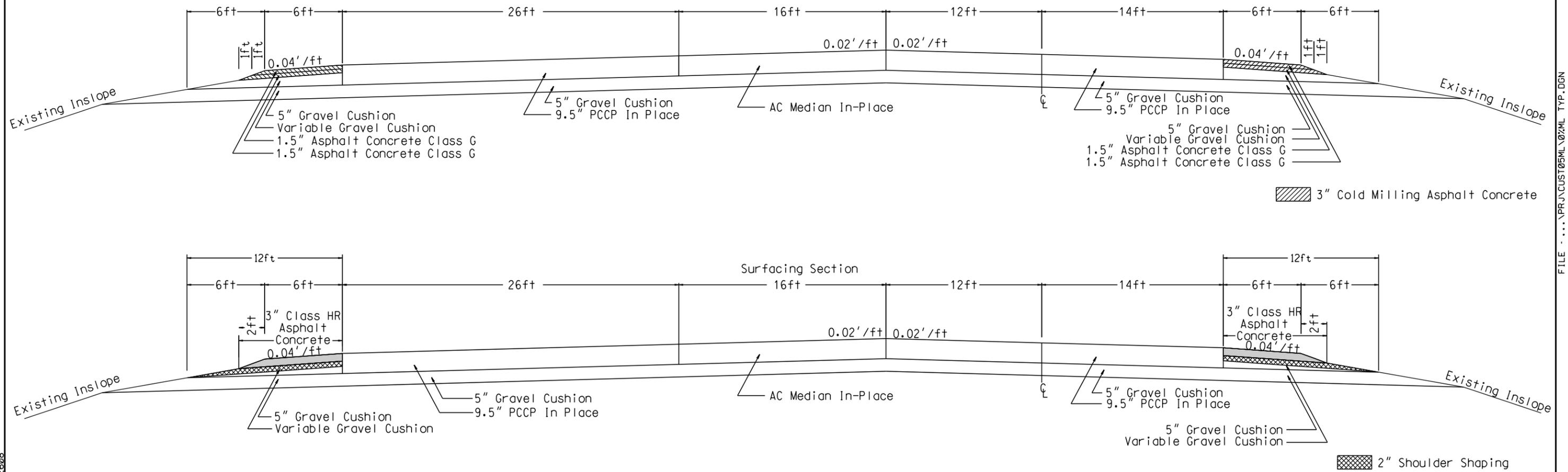
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0016(88)0, NH 0212(185)13 & NH 0079(76)58	11	17

Plotting Date: 02/17/2016
Revised 2/17/2016 GDS

PLOT SCALE - 1:7,48687

PLOT NAME - 3

US Highway 79
Northbound
MRM 59.318 to MRM 59.740
Southbound
MRM 52.298 to MRM 59.498
In Place & Cold Milling Section



PLOTTED FROM - TRRC12608

FILE - ... \PRJ\CUSTOM\05ML\02\ML TYP.DGN

TYPICAL SECTION

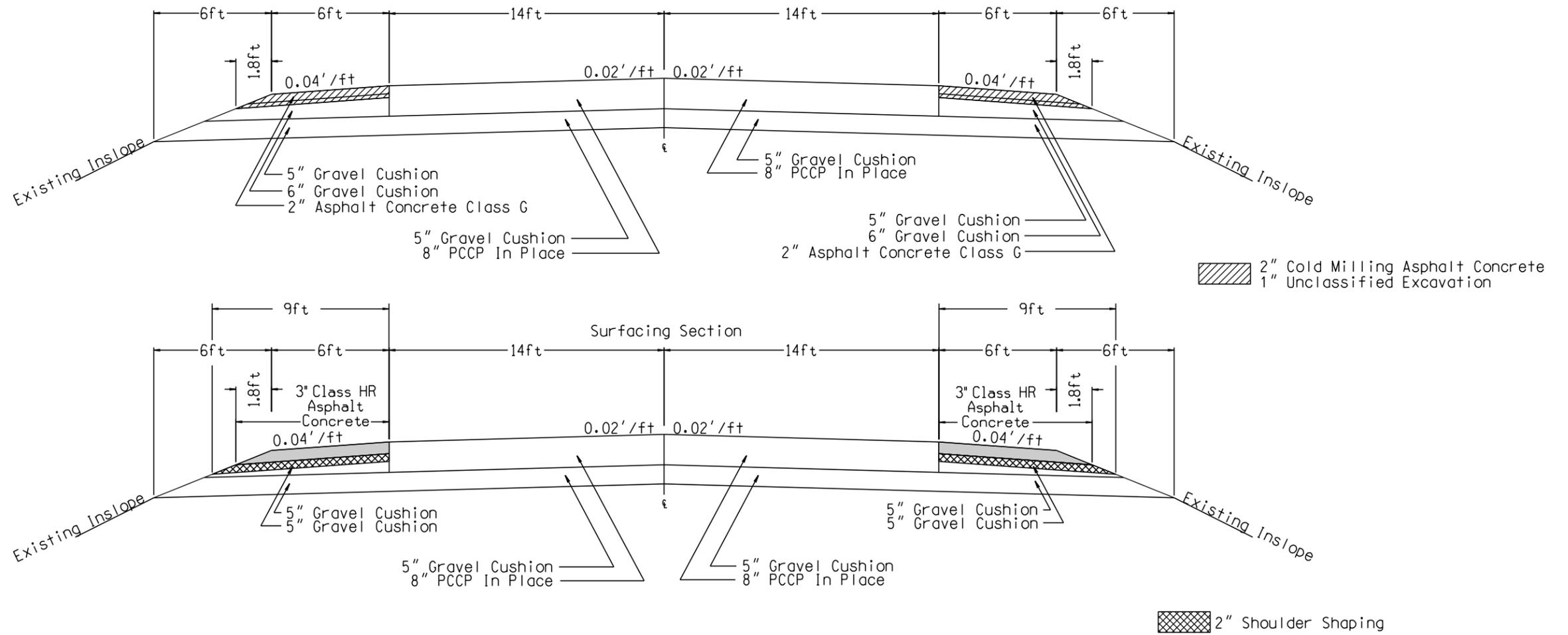
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0016(88)0, NH 0212(185)13 & NH 0079(76)58	12	17

Plotting Date: 02/01/2016

PLOT SCALE - 1+6.1875

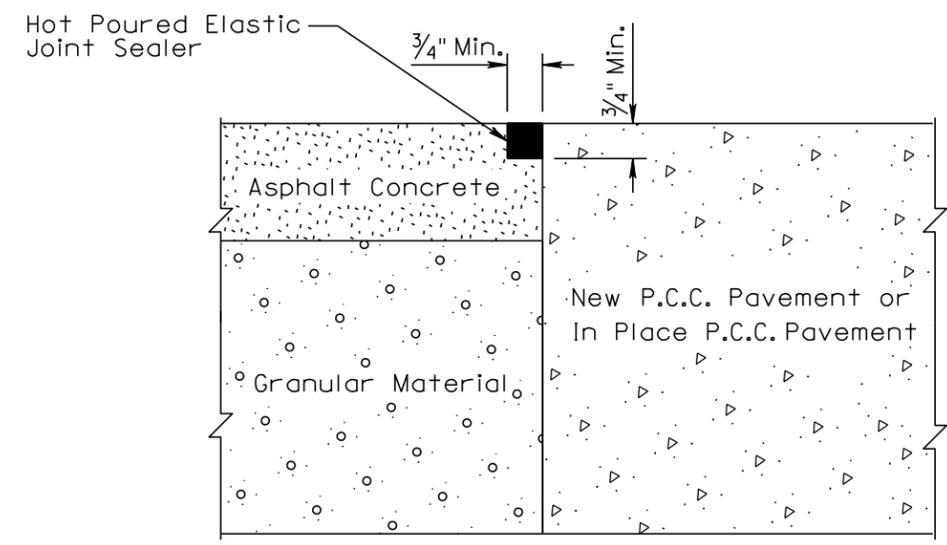
PLOT NAME - 4

US Highway 212
MRM 13.82+0.000 to MRM 15.32+0.100
In Place, Cold Milling and Excavation Section



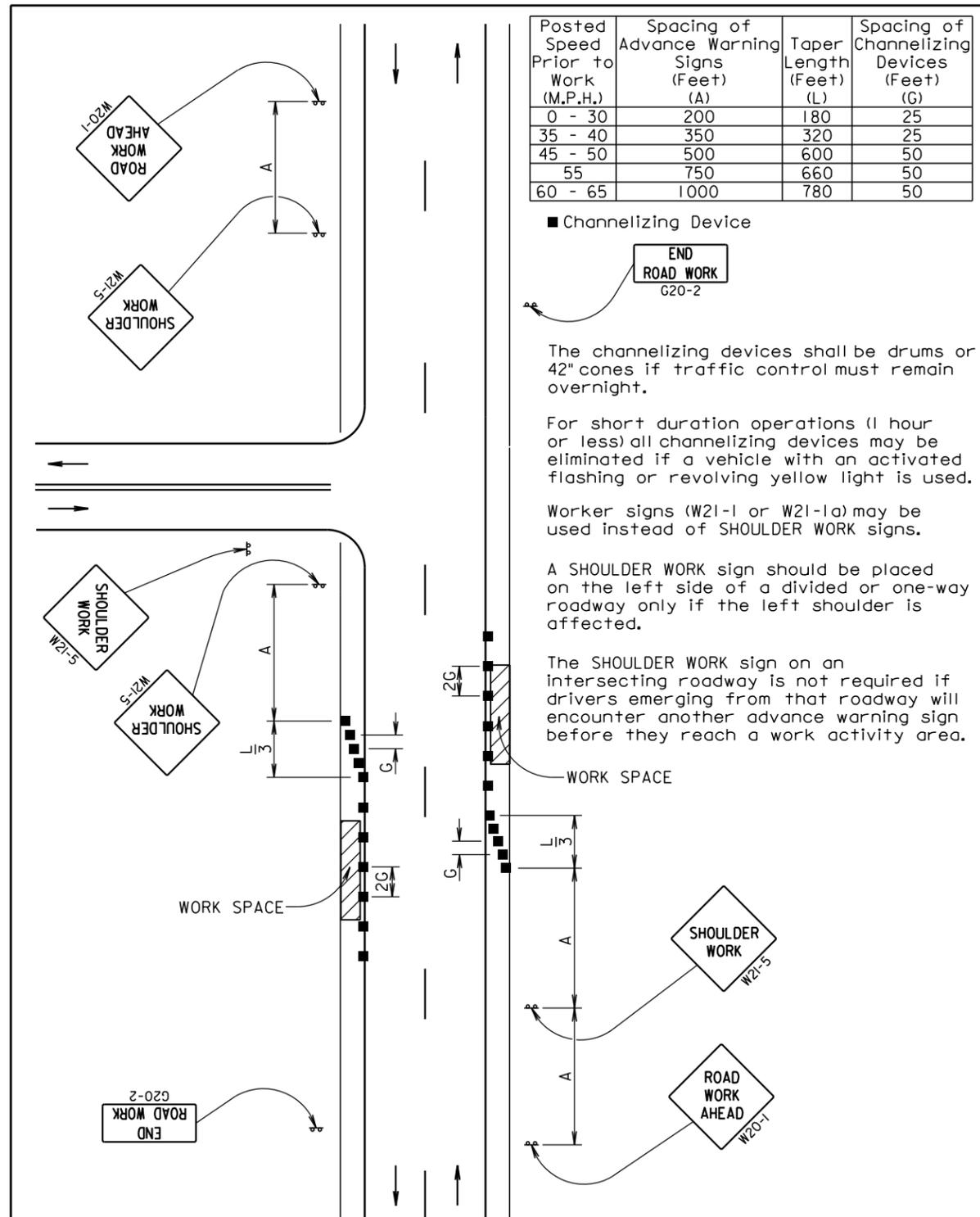
PLOTTED FROM - TRRC12508

FILE - ... \PRJ\CUSTOM\05ML\02\ML TYP.DGN

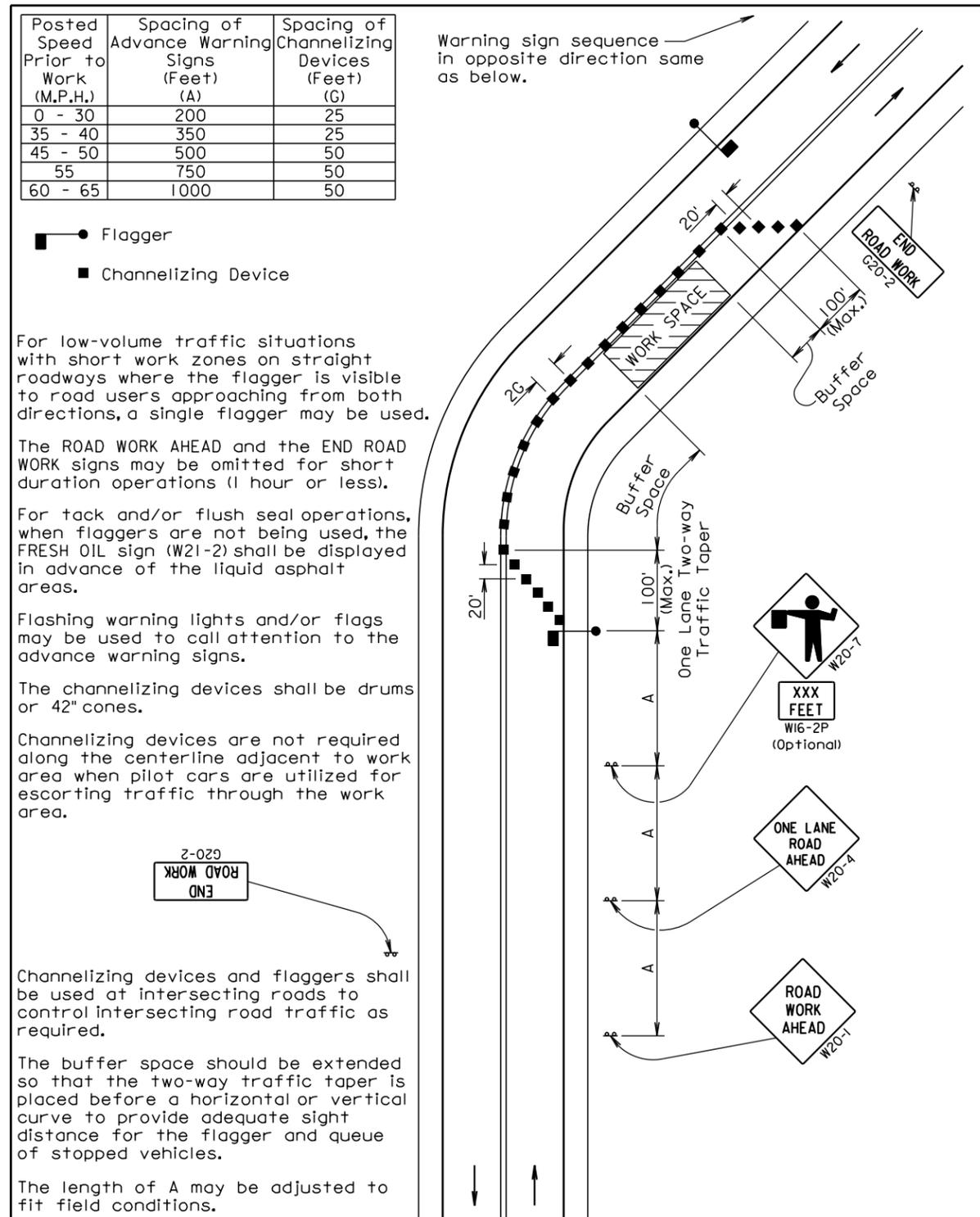


March 31, 2000

<i>Published Date: 1st Qtr. 2016</i>	S D D O T	ASPHALT CONCRETE SHOULDER JOINT ADJACENT TO PCC PAVEMENT	<i>PLATE NUMBER 320.15</i>
			<i>Sheet 1 of 1</i>



September 22, 2014



September 22, 2014

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	180	25
35 - 40	350	320	25
45 - 50	500	600	50 *
55	750	660	50 *
60 - 65	1000	780	50 *

* Spacing is 40' for 42" cones.

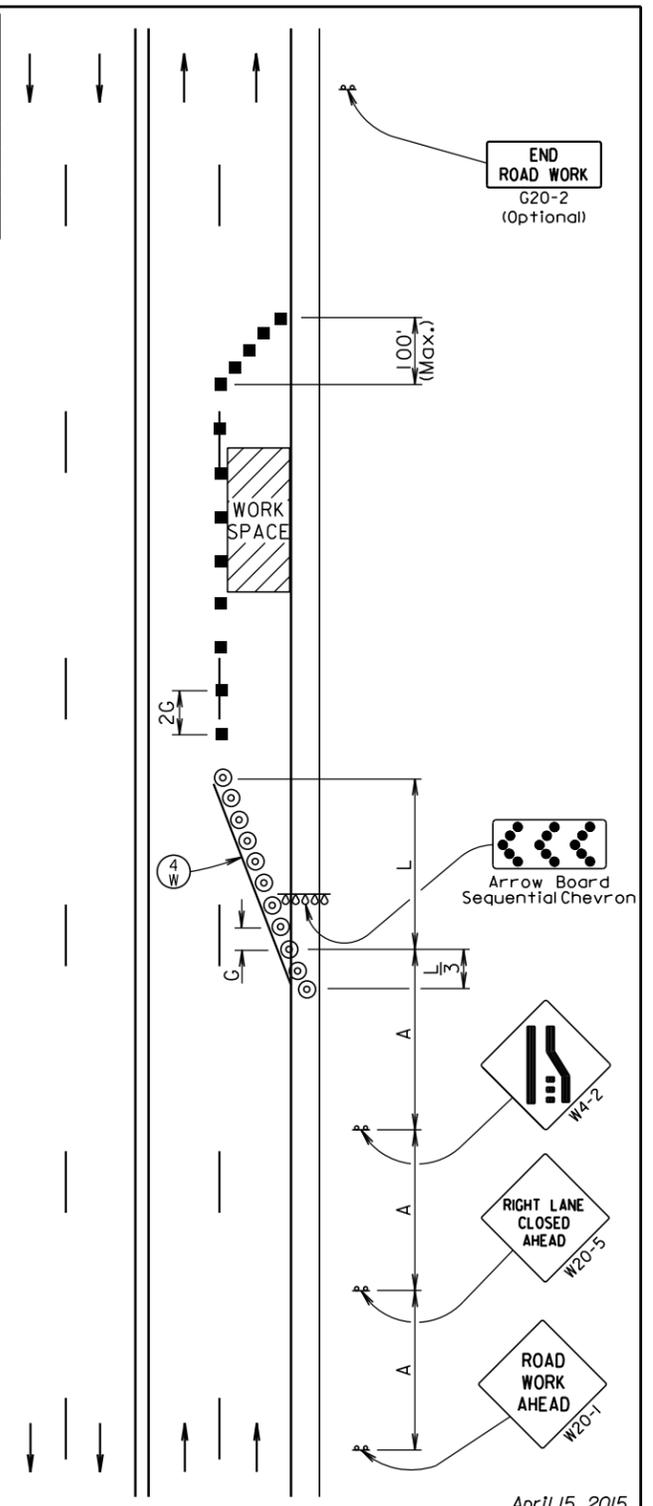
- ⊙ Reflectorized Drum
- Channelizing Device
- ④ 4" White Temporary Pavement Marking

The channelizing devices shall be 42" cones or drums.

42" cones may be used in place of the drums shown in the taper if setup will not be used during night time hours.

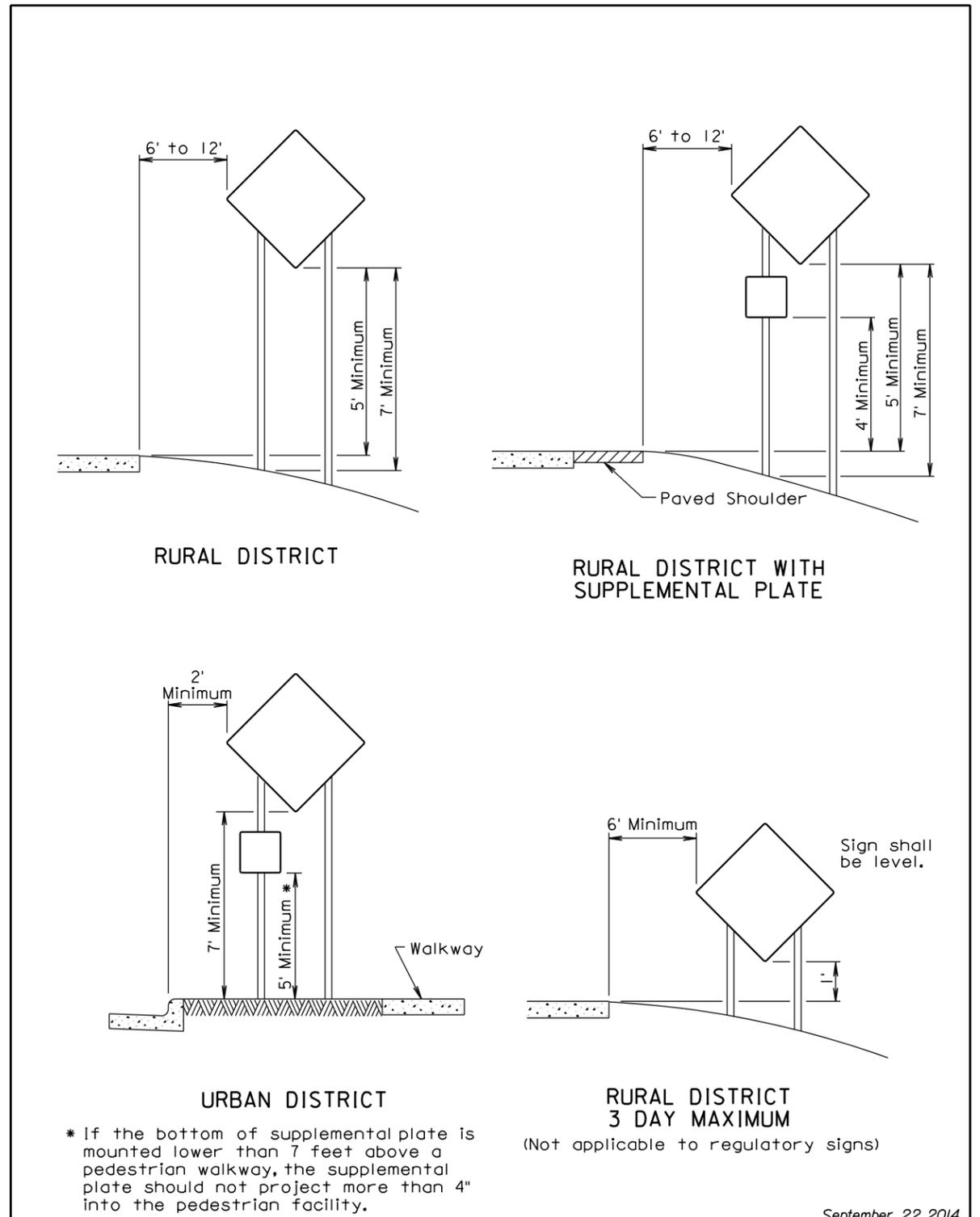
Temporary pavement markings shall be used if traffic control must remain overnight.

The length of A and L may be adjusted to fit field conditions.



April 15, 2015

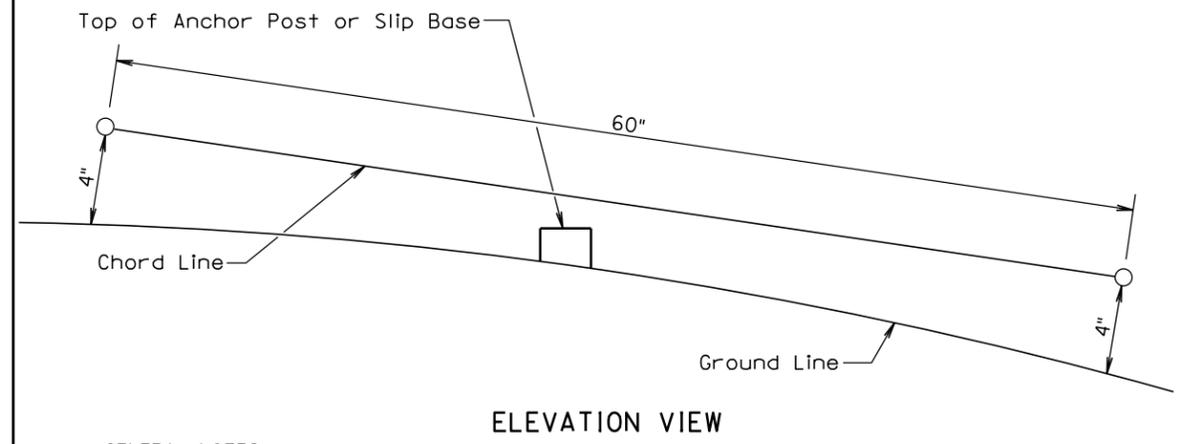
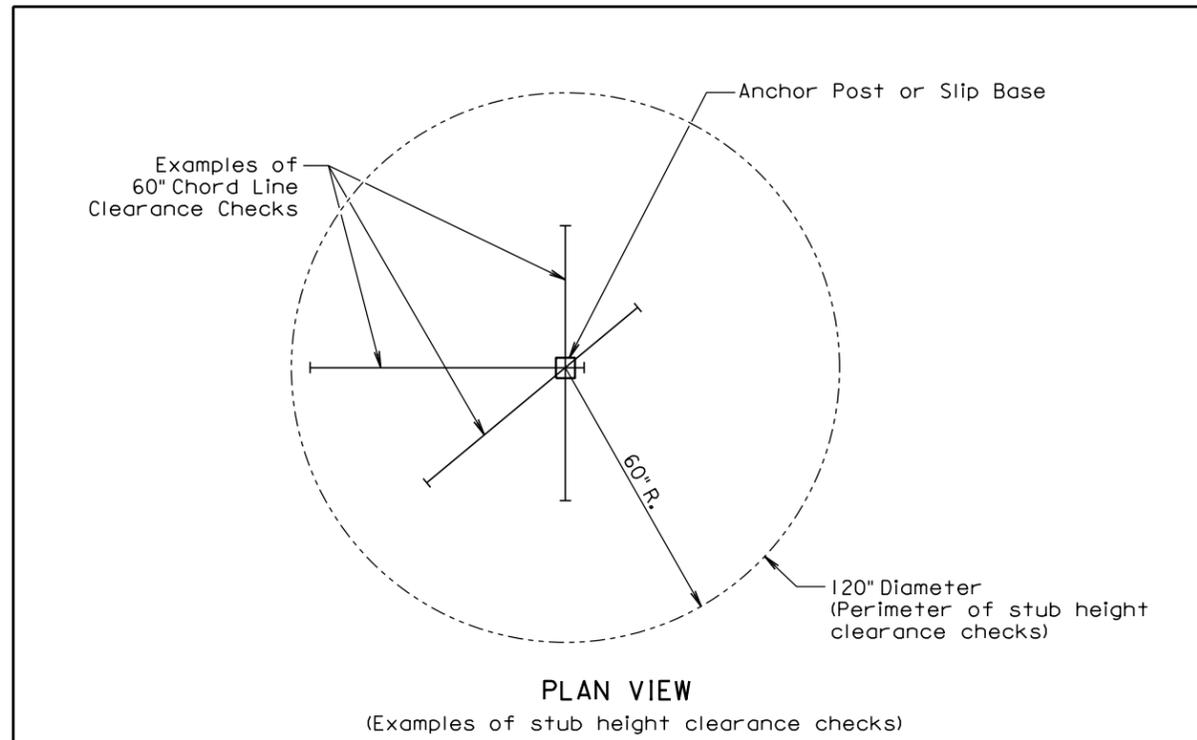
Published Date: 1st Qtr. 2016	S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES 4-LANE UNDIVIDED, RIGHT LANE CLOSED	PLATE NUMBER 634.47
			Sheet 1 of 1



* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

September 22, 2014

Published Date: 1st Qtr. 2016	S D D O T	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1



GENERAL NOTES:

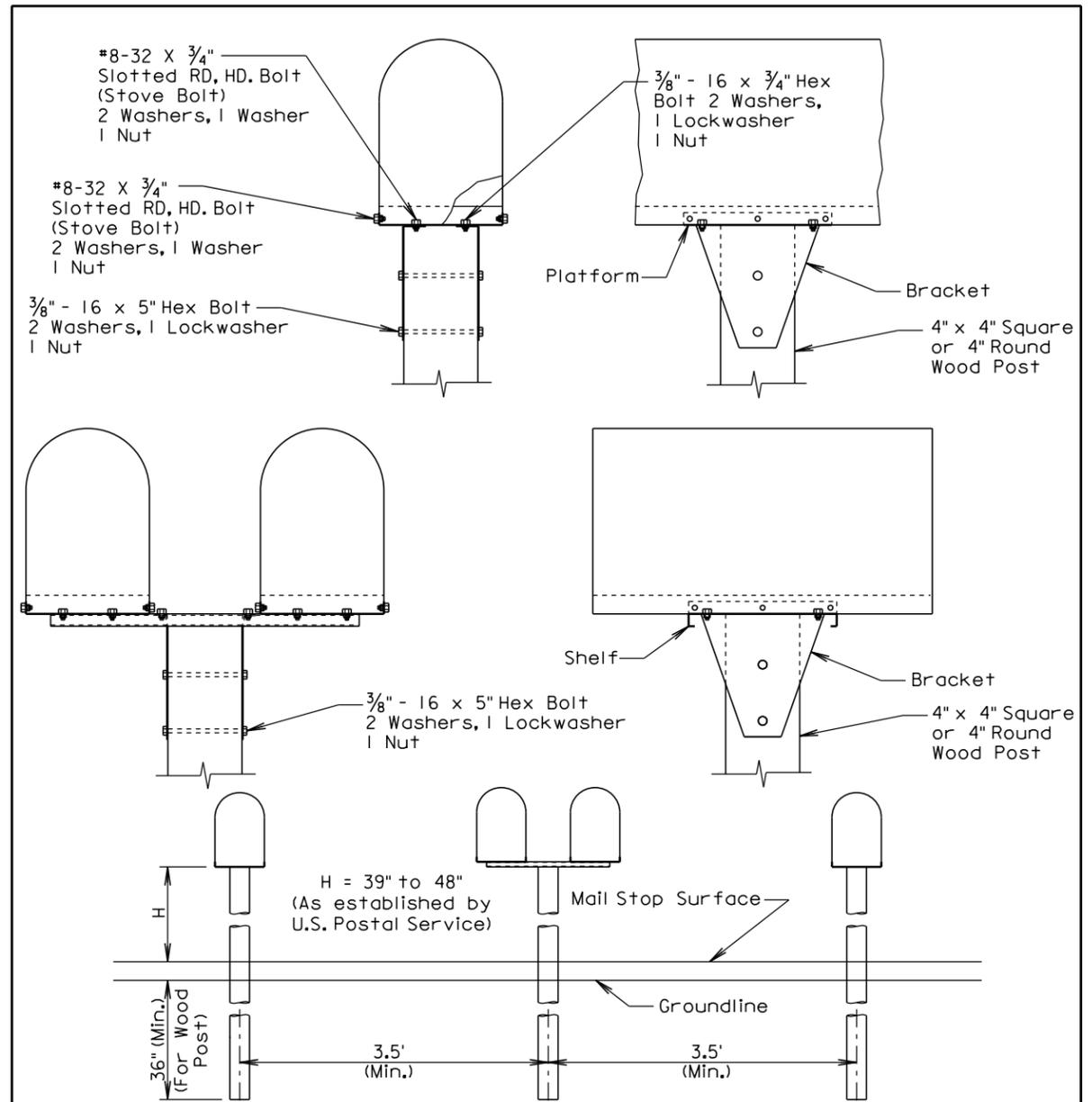
The top of anchor posts and slip bases SHALL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height shall be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

July 1, 2005

<i>Published Date: 1st Qtr. 2016</i>	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1



GENERAL NOTES:

SPACING FOR MULTIPLE POST INSTALLATION

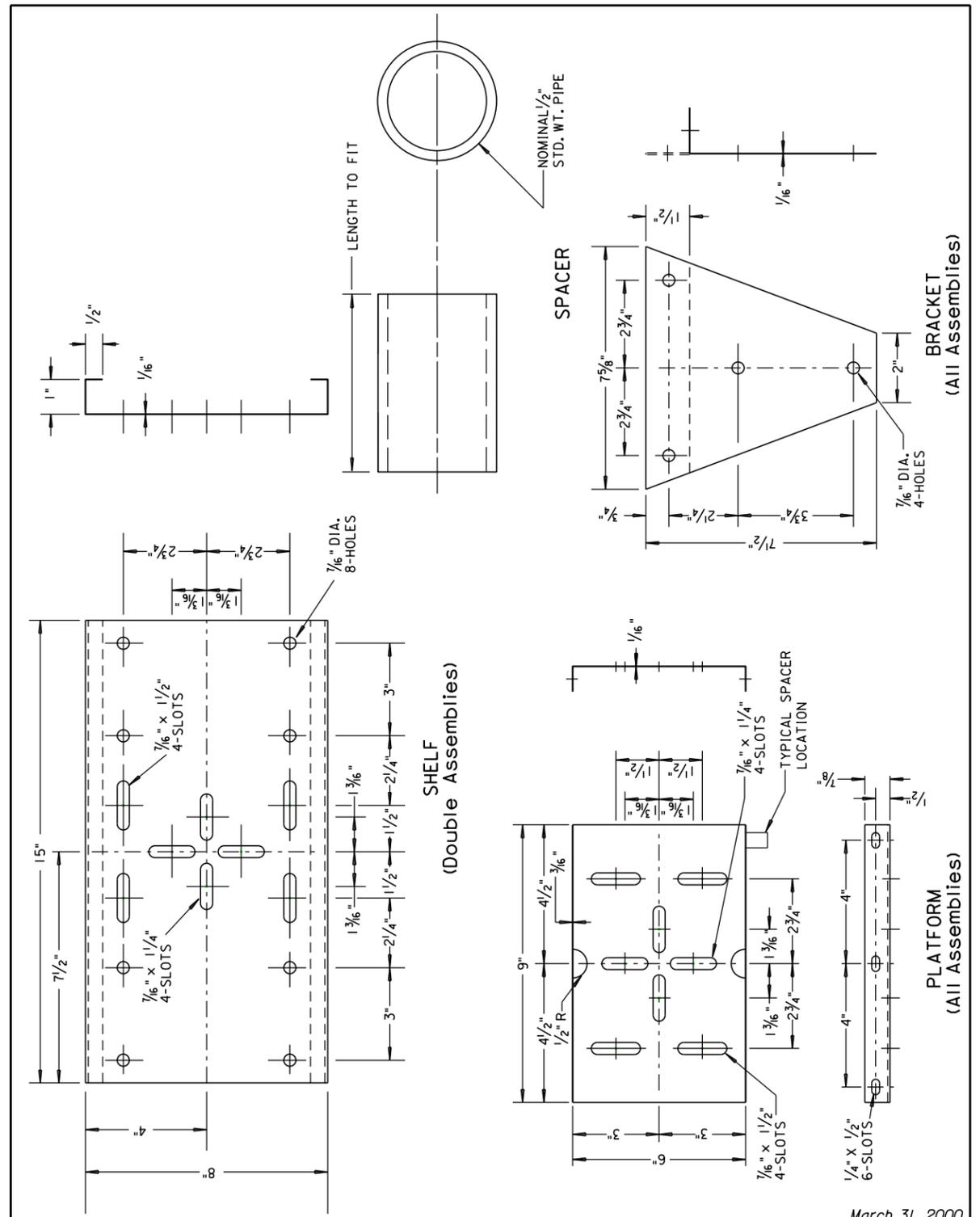
The post support assemblies provided should be consistent throughout the project. Single and double mailboxes may be in any sequence.

Post support assemblies shall be one from the approved products list, a 4"x4" or 4" round wood post, or an alternate post support assembly that meets the test level 3 crash testing requirements of NCHRP 350 or MASH.

Alternate mailbox support assemblies shall be approved by the Engineer prior to installation. The Contractor shall provide the Engineer written certification that the mailbox support assembly has met the crash testing requirements and will be installed in accordance with the manufacturer's installation instructions.

September 6, 2013

Published Date: 1st Qtr. 2016	S D D O T	SINGLE AND DOUBLE MAILBOX ASSEMBLIES	PLATE NUMBER 900.02
			Sheet 1 of 1



March 31, 2000

Published Date: 1st Qtr. 2016	S D D O T	MAILBOX SUPPORT HARDWARE	PLATE NUMBER 900.03
			Sheet 1 of 1